

## DRAGONS OF THE PRIME.

**EXTINCT MONSTERS.** A Popular Account of Some of the Larger Forms of Ancient Animal Life, By H. N. Hutchinson, B. A., F. G. S., With Illustrations by J. Smith and others.

Not before it was needed, the writer of this very interesting volume has undertaken a popular and at the same time trustworthy account of the larger forms of ancient animal life. The chief value of the work consists in the fact that it represents and is abreast with modern discovery, and this means a great deal, inasmuch as the ideas commonly entertained on the subjects here treated have been derived from information and illustrations belonging to the cradle of infancy of the paleontological science. A large percentage of the speculations and guesses of that time have been completely upset by later and fuller knowledge, and perhaps no man of science has done more to expand and to revolutionize this science than Professor Marsh, of Yale. The study of American mesozoic forms has been of the greatest service to the scientific world at large, and paleontology has made advances of late years through these researches which have thrown open almost a new world for exploration.

It is the great reptilian age which has been chiefly exploited, the age when, as Tennyson puts it, "a monstrous eel was the lord of the earth, before quadrupeds came, and, of course, long before the appearance of man. There is, however, a deeply interesting and perplexing question involved, and that is early man's knowledge or conjectures about the extinct monsters of the mesozoic period. Where and how did our remote ancestors derive the ideas about such creatures which they certainly entertained? Where, for example, did they get their notions concerning dragons?" We know now that in the reptilian age there really were monstrous forms bearing at least some resemblance to the fabled dragon, but it is not credible that any such forms survived long enough to be seen by men; and the latter then knew nothing of either geology or paleontology, and could hardly have obtained any information or suggestions from fossil or other remains. The author of this book does not appear to us very happy in his attempt to solve the problem. He appears to think that coincidence is the only explanation available; but the improbability of such a solution is strongly against its acceptability.

It is of course possible that stray specimens of the great reptiles of the mesozoic era really survived and were seen by early man, who preserved the tradition of them orally, a practice always followed by primitive peoples, and as much experience demonstrates, capable of handing down almost anything. Such changes as subsequently took place from the real to the fabulous might easily have been grafted on during the process of transmission. This seems to us far more likely than that our dull-witted progenitors forebears should have been capable of evolving dragons from their unaided imagination. Whoever will examine Mr. Smith's illustrations to this volume, moreover, will at once perceive that there are striking resemblances between the mythical dragons and the actual reptiles of the mesozoic age, and that no great or radical changes of structure were required to evolve the one out of the other.

But, in truth, the whole subject abounds in perplexities. For example, why should herbivorous creatures, as most of these reptiles were, have been built on so colossal a scale? Why should a body from thirty to sixty feet long and stout in proportion be needed by an animal that fed only upon vegetation? In the case of the carnivorous dinosaurs it is easy to understand the meaning of their bulk and immense strength. Everything, however, in these days was on a colossal scale, and when the turn of the quadrupeds came they too—as instance the mastodon and the mammoth—appeared in gigantic forms. No doubt it was a very good thing for feeble man that he did not make his appearance when these monsters roamed the earth and held sway over it. The monsters themselves had a hard time enough contending with one another, and a small animal like the anthropoid ape would have made but a mouthful for the flesh-eaters. But there can never cease to be deep interest in the study of those strange times, and even the unlearned public can find it in a work so carefully simplified as the present one.

Mr. Hutchinson is justified, in expressing some surprise that the work of popularizing this new knowledge has not been taken up before. He says: "In the far and wild West a host of strange reptiles and quadrupeds have been unearthed from their rocky sepulchres, often of incredibly huge proportions, and in many cases more weird and strange than the imagination could conceive; and yet the public have never heard of these discoveries, by the side of which the now well-known 'lost creation' of Cuvier, Buckland, or Conybeare sink into the shade." For once, we beg leave to suggest, the hungry pressman seeking "copy" has failed to see a good thing. Descriptions of some of Marsh's monsters, and how they were found, might, one would think, have proved attractive to a public ever on the lookout for something new." Happily, it occurred to Mr. Hutchinson to do the work of exploiting the extinct monsters himself, and with the able assistance of Mr. Smith as an illustrator he has produced a book which should have a wide popularity.

The range over which the author travels is extensive, and he brings his readers into contact with a large number of the gigantic and often terrifying shapes which peopled the old world. The importance of the bearing of the facts of paleontology upon the doctrines of evolution is, of course, very great, and at this point much valuable and fruitful suggestion and inference will be found. Altogether the task has been accomplished with a great deal of care and thoroughness, and it is worthy object of popularizing scientific knowledge of a kind which has for long years been quite curiously neglected save by men of science themselves.

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